Such measurement comprise hemoglobin A_{Ic} (HbA_{Ic}), fasting blood glucose and/or glucose tolerance. For all of these measurements, blood is drawn from the subjects that were treated with the compound and subjects that were treated with the placebo.

One of skill in the art is cognizant that the best characterized variant of hemoglobin is A_{Ic}, which constitutes about 3.5% of the hemoglobin in a normal subject, but may be increased two to three fold in individuals suffering from diabetes. HbA_{Ic} is formed by nonenzymatic glycosylation of hemoglobin A. Its level is directly proportional to the time-integrated mean blood glucose concentration over the preceding two to three months. For this reason, this measurement is widely used as a measure of glucose control in diabetic patients and is a tool for diagnosis of diabetic states. Normal and variant hemoglobins can be detected and quantified by standard clinical laboratory techniques. HbA_{Ic} is expressed as the percentage of total hemoglobin. For example, in a normal subject, the percentage of HbA_{Ic} is about 3.3% and for a diabetic patient it is about 8% or higher. The advantage of using HbA_{Ic} is that it is not influenced by acute changes in blood glucose or by the interval since the last meal. Thus, it is contemplated that the HbA_{Ic} percentage will decrease in diabetic subjects that are treated with the extract or active compound compared to diabetic subjects treated with a placebo. It is further envisioned that with continued usage of the ginseng berry extract or active compound that the levels of HbA_{Ic} in a diabetic subject will be similar to a normal subject, thus illustrating that the ginseng berry extract or active compound can function to maintain glucose homeostasis in a diabetic subject.

Fasting blood glucose and oral glucose tolerance tests are preformed similar to the procedures that are well known in the art. Briefly, after a 4 h fast, on day 0 (before treatment), 5, and day 12 or any other endpoint, blood is collected for measurement of fasting glucose level. Oral glucose tolerance test is done on day 0 (before treatment) and day 12 (or last day of treatment). On the day of the test, subjects are fasted for 4 hr followed by an oral consumption of glucose (usually 30-50 g). Blood glucose levels are determined in blood samples from at 0 (prior to), and 30, 60 and 120 min after glucose

administration with a Glucose Analyzer (Hemocue AB, Angelholm, Sweden). It is envisioned that the subjects treated with the extract or the active compound will have decreased fasting blood glucose levels compared to that of diabetic subjects treated with a placebo. Also, subjects treated with the extract or the active compound are envisioned to have improved glucose tolerance.

EXAMPLE 19

PATIENTS TREATED WITH ANTI-OBESITY AGENTS

For clinical studies, the whole berry extract, compositions comprising at least one ginsenoside or compositions comprising more than one ginsenoside, and/or an organic extracts comprising at least one ginsenoside are administered to a subject suffering from obesity. Ginsenosides are highly lipid soluble, thus an organic solvent can be used to solublize the ginsenosides.

Administration of the extract or active compound comprises a variety of routes depending upon the form of the extract or compound. Whole berry extract is administered orally, for example, as a solution or tablet. Administration of the compositions comprising a single ginsenoside or compositions comprising multiple ginsenosides are administered subcutaneously. Subcutaneous administration includes, but is not limited to, a single injection, multiple injections or continuous infusion. And administration of the organic extract or the compositions comprising a one or more than one ginsenoside is administered transdermally via a patch.

Obese subjects are treated with at least a daily dose of the compound for a period of time, *e.g.,* 5 days, 12 days, 14 days, 21 days or longer.

Prior to treatment, the obese subjects are weighed to determine the starting body weight. In addition to starting body weight, metabolic parameters are also measured. Metabolic parameters include, body temperature, energy expeniture, cholesterol, free fatty acids, glycerol, insulin, and triglyceride. The mesurement of these parameters are well known and used in the clinical environment.

During the treatment, body weight and metabolic parameters are measured to determine the effects of the treatment of ginseng berry extract or compositions on obese subjects. It is anticipated that ginseng berry extract or compositions will decrease body weight in obese subjects. A decrease in body weight may be related to increases in body temperature or energy expeniture and/or decreases in food consumption. Thus, ginseng berry extract or compositions may be used as an anti-obesity agent for these subjects.

EXAMPLE 20

PATIENTS TREATED TREATED WITH EXTRACT OR ACTIVE COMPOUND DECREASE CHOLESTEROL LEVELS

For clinical studies, the whole berry extract, compositions comprising at least one ginsenoside or compositions comprising more than one ginsenoside, and/or an organic extracts comprising at least one ginsenoside are administered to a subject suffering from high cholesterol. Ginsenosides are highly lipid soluble, thus an organic solvent can be used to solublize the ginsenosides.

Administration of the extract or active compound comprises a variety of routes depending upon the form of the extract or compound. For example, whole berry extract is administered orally. Administration of the compositions comprising a single ginsenoside or compositions comprising multiple ginsenosides is administered subcutaneously. Subcutaneous administration includes, but is not limited to, a single injection, multiple injections or continuous infusion. And administration of the organic extract or the compositions comprising a one or more than one ginsenoside is administered transdermally via a patch. In addition to administering the extract or the active compound, a placebo compound is administered to subjects via similar routes.

For the experiments, the subjects are treated with at least a daily dose of the compound or placebo for a period of time, *e.g.*, 5 days, 12 days, 14 days, 21 days or longer.